

What is claimed is:

1 1. A semiconductor chip package comprising:
2 a ball grid array substrate panel having top and bottom surfaces, said bottom
3 surface having a plurality of solder balls attached thereon;
4 at least one semiconductor chip being mounted substantially in the center of said
5 top surface of said substrate panel;
6 a plurality of contact pads formed on said top surface of said substrate panel, each
7 of said contact pads being located near a corner of said semiconductor chip; and
8 a heat slug having a top plate covering said semiconductor chip and a plurality of
9 flanges extending down to said substrate panel, said top plate being bonded to said
10 semiconductor chip by means of a first adhesive material, and said heat slug being
11 connected to said contact pads on said substrate panel by means of a second
12 adhesive material.

1 2. The semiconductor chip package according to claim 1, said first adhesive material
2 being thermally conductive.

1 3. The semiconductor chip package according to claim 1, said heat slug being
2 electrically connected to said substrate for providing electrical shielding effect.

1 4. The semiconductor chip package according to claim 3, said second adhesive
2 material being electrically conductive.

1 5. The semiconductor chip package according to claim 1, said heat slug being made
2 of metal.

1 6. The semiconductor chip package according to claim 1, said heat slug further
2 comprising a plurality of contact bodies for providing close contact with said
3 contact pads and bonding said heat slug to said substrate panel.

1 7. The semiconductor chip package according to claim 6, each of said contact bodies
2 being formed near a corner of said top plate, and having a hollow interior and a flat
3 bottom.

1 8. The semiconductor chip package according to claim 6, said first adhesive material
2 being thermally conductive.

1 9. The semiconductor chip package according to claim 6, said heat slug being
2 electrically connected to said substrate for providing electrical shielding effect.

1 10. The semiconductor chip package according to claim 6, said heat slug being made
2 of metal.

1 11. A semiconductor chip package comprising:

2 a ball grid array substrate panel having top and bottom surfaces, said bottom
3 surface having a plurality of solder balls attached thereon;

4 at least one semiconductor chip being mounted substantially in the center of said
5 top surface of said substrate panel;

6 a supporting structure being bonded on said top surface of said substrate panel;
7 and

8 a heat slug having a top plate covering said semiconductor chip and a plurality of
9 flanges extending down to said substrate panel, said top plate being bonded to said
10 semiconductor chip by means of an adhesive material, and said heat slug being
11 fixed to said substrate panel by means of said supporting structure.

1 12. The semiconductor chip package according to claim 11, said adhesive material
2 being thermally conductive.

1 13. The semiconductor chip package according to claim 11, said heat slug being
2 electrically connected to said substrate for providing electrical shielding effect.

11/ 8/ 1 14. The semiconductor chip package according to claim 11, said heat slug being made
2 of metal.

15. The semiconductor chip package according to claim 11, said supporting structure
having a rectangular shape and a central opening for fully exposing the top surface
3 of said semiconductor chip.

1 16. The semiconductor chip package according to claim 15, said supporting structure
2 further having at least two supporting stubs each being located near a corner of
3 said supporting structure.

1 17. The semiconductor chip package according to claim 16, said top plate of said heat
2 slug further having at least two contact bodies each having an opening, and said
3 supporting stubs being snapped in the openings of said contact bodies for fixing
4 said heat slug to said substrate panel.

15. 1 18. The semiconductor chip packages according to claim 17, said contact bodies each
2 having a hollow interior and a flat bottom.

16. 1 19. The semiconductor chip packages according to claim 17, at least two of said
2 supporting stubs being positioned at two diagonal corners of said supporting
3 structure.

17. 1 20. The semiconductor chip packages according to claim 19, said top plate of said heat
2 slug further having at least two contact bodies formed near another two diagonal
3 corners of said supporting structure.